UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/747,956	12/31/2003	Ulrich Seseke-Koyro	037110.51540D1	6209

23911 7590 06/01/2006

CROWELL & MORING LLP
INTELLECTUAL PROPERTY GROUP
P.O. BOX 14300
WASHINGTON, DC 20044-4300

EXAMINER	
NGUYEN, NGOC YEN M	
ART UNIT	**PAPER NUMBER**
1754	

DATE MAILED: 06/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/747,956
Filing Date: December 31, 2003
Appellant(s): SESEKE-KOYRO ET AL.

J. D. Evans
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed March 21, 2006 appealing from the Office action mailed April 7, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4,989,775	Shimajiri et al	02-1991
5,723,187	Popoola et al	03-1998
6,105,850	Lauzon et al	08-2000
WO 99/48641	Seseke-Koyro et al	09-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48641 (to Seseke-Koyro et al) or Lauzon et al (6,105,850), either one in view of Popoola et al (5,723,187).

Seseke-Koyro discloses an alkali fluorozincate as a fluxing agent for aluminum or aluminum alloys (note claim 1). The alkali metal can be potassium (note claim 2).

Alternatively, Lauzon '850 is applied as stated below.

Lauzon '850 discloses that potassium fluorozincate can be used as a fluxing agent for aluminum brazing (note claim 1 and column 2, lines 34-41).

The process limitations in claims 8, 11 and 12 are noted. However, the instant claims are product-by-process claims, which are treated as product claims. Since the examiner has found a substantially similar product as in the applied prior art, the instant claims are rendered obvious. *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324.

The difference is Seseke-Koyro or Lauzon '850 does not disclose that the particle size of the potassium fluorozincate.

Popoola '187 discloses in a process of using a flux to for bonding metals to aluminum substrate (note column 1, lines 7-10). The flux can be fluoride salts and the flux is desired to be applied as a solution and the particle size of the flux is controlled to less than 10 micrometers, with at least 70% of the salts being in the particle size range of 2-4 micrometers so that the particles remaining in suspension at all times without stirring (note column 2, lines 18-26). Particularly, Popoola '187 discloses that the fluoride salt is added to the sprayable medium in closely controlled particle size to minimize the need for stirring and to retain at least 25% by volume of the salt in suspension at all times. To this end, the salt particle is equal to or less than 10 microns with about 70% being 2-4 microns (note column 3, lines 42-50).

It would have been obvious to one of ordinary skill in the art to obtain potassium fluorozincate of either Seseke-Koyro or Lauzon '850, by optimizing the conditions of the process of making such product, or by pulverizing (if the product particles are too big) or agglomerating (if the product particles are too small), with the particle size of less than 10 micrometers as suggested by Popoola '187 because such particle size is desired in the art of using a flux in a brazing process.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO '461 or Lauzon '850 in view of Shimajiri et al (4,989,775).

Seseke-Koyro or Lauzon '850 is applied as stated above.

The difference is Seseke-Koyro or Lauzon '850 does not disclose the particle size for the potassium fluorozincate.

Shimajiri '775 discloses for a process of brazing aluminum components, a fluoride flux powder having a grain size of 15 microns on average is desirable (note column 4, lines 55-57).

It would have been obvious to one of ordinary skill in the art to obtain potassium fluorozincate of either Seseke-Koyro or Lauzon '850, by optimizing the conditions of the process of making such product, or by pulverizing (if the product particles are too big) or agglomerating (if the product particles are too small), with the particle size of 15 micrometers on average, as suggested by Shimajiri '775 because such particle size is desired in the art of using a flux in a brazing process.

(10) Response to Argument

1. Appellants argue that claims 8-12 are patentable because the primary and secondary references relate to distinctly different materials and there is no suggestion or motivation to combine these references.

Hereinafter, primary references refer to Seseke-Koyro and Lauzon; secondary references refer to Popoola and Shimajiri; flux, flux agent, and fluxing agent are used interchangeably.

Appellants argue that it would not have been obvious to combine the secondary references of Popoola or Shimajiri with either Seseke-Koyro or Lauzon because

Seseke-Koyro and Lauzon each relate to potassium fluorozincate salts while Popoola and Shimajiri disclose different aluminum-containing salts.

As stated in the above rejections, all references are related to the use of a fluxing agent (or a flux) to bond or braze aluminum substrates, note the English abstract of Seseke-Koyro; claim 1 of Lauzon '850; column 1, lines 7-10 of Popoola '187; claim 1 of Shimajiri '775. In Seseke-Koyro and Lauzon '850, potassium fluorozincate is clearly disclosed as a commercially available fluxing agent, which is suitable for brazing aluminum substrates. The difference is Seseke-Koyro and Lauzon '850 do not teach the particle size of such potassium fluorozincate. However, as suggested by Popoola '187 or Shimajiri '775, different methods can be used to apply the fluxing agent in the process of brazing aluminum substrates. When a wet method is used, i.e., using a slurry or suspension of the fluxing agent, small particle size is desirable as suggested by Popoola '187 and when a dry method is used, larger particle size is preferred as suggested by Shimajiri '775. Thus, it would have been obvious to one of ordinary skill in the art to apply the potassium fluorozincate fluxing agent, as disclosed in Seseke-Koyro or Lauzon '850 by either the wet process as suggested by Popoola '187 or by the dry process as suggested by Shimajiri '775 because these are known and conventional methods in the art and to select a proper particle size for the fluxing agent depending on process used.

It should also be noted that in Lauzon '850, the flux is preferred to be sprayed in the form of an aqueous flux (note column 3, lines 24-28). Thus, it would have been obvious to one of ordinary skill in the art to select a flux with small particle size, i.e. at

least 70% of the flux being in the particle size range of 2-4 micrometers, as suggested by Popoola '187 because such particle size would remain in suspension at all times without stirring (note Popoola '187, column 2, lines 18-27). Alternatively, in Seseke-Koyro, it is disclosed that dry application or wet application can be used to apply the fluxing agent on the aluminum components (note Seseke-Koyro, column 3, lines 50-56). Thus, when a dry application is used, it would have been obvious to one of ordinary skill in the art to select a coarse particle size for the fluxing agent of Seseke-Koyro, i.e. average particle size of greater than 15 microns, as suggested by Shimajiri '775 because such particle size is suitable for dry application.

2. Appellants argue that Claims 8-12 are patentable because there is no reasonable expectation that the proposed medication would be successful.

Appellants argue that the primary references disclose potassium fluorozincate fluxes, but the secondary references each relate to a completely different material; thus, one could not have had a reasonable expectation of successfully *forming* alkali metal fluorozincate salts having the claimed particle size distributions even if Popoola or Shimajiri were combined with Seseke-Koyro or Lauzon.

Firstly, Popoola or Shimajiri is applied to teach a desired particle size for the fluxing agent, not to teach the method of making the fluxing agent itself. In the primary references, i.e., Seseke-Koyro or Lauzon, potassium fluorozincate fluxing agent is clearly disclosed. Thus, when the teaching of these primary references is taken in view of the secondary references (Popoola or Shimajiri), it would have been obvious to

subject the potassium fluorozincate fluxing agent in the primary references to any additional process steps, such as classifying, granulating or pulverizing processes, to obtain the desired particle size as suggested in the secondary references. It should also be noted that in Appellants' specification, it is disclosed that alkali metal fluorozincate produced by the prior art (German Published Application 199 13 111) is coarser than the claimed product (note paragraph bridging pages 4-5). This fairly teaches that a coarser product of fluorozincate is known and available in the art and it would have well within the skilled of the artisan to reduce the fluorozincate coarser particle size to a finer particle size as suggested by Popoola. Secondly, the particle size as suggested in the secondary reference is dependent on the method of applying the fluxing agent, not on the type or composition of the fluxing agent. Thus, one skilled in the art would have reasonable expected that the finer particles would work equally well when the fluxing agent as disclosed in the primary references is used in a wet process instead of the fluxing agent of the Popoola or coarser particle size of the fluxing agent of the primary references in a dry process instead of the fluxing agent of Shimajiri, i.e., the fluxing agent would be successfully applied on the aluminum substrate(s) to be brazed. Lastly, Lauzon '850 fairly teaches that potassium fluorozincate as disclosed in Lauzon '850 or in Seseke-Koyro is an analogous fluxing agent to the potassium fluoroaluminate (note column 1, lines 5-11) as disclosed in the secondary references. Thus, it would have been obvious to one skilled in the art to use the same method for applying the fluxing agent in the secondary references for the analogous fluxing agent in the primary references.

3. Appellants argue that there is no basis to incorporate the particle size of the aluminum-based materials in Popoola into the materials of Seseke-Koyro or Lauzon.

First, Appellants argue that there is no reason to believe that the teachings related to the potassium aluminum fluoride salts of Popoola would even be applicable to the potassium fluorozincate salts as disclosed by Seseke-Koyro and Lauzon.

Again, as stated above, the particle size of fluxing agent is selected based on the method of applying the fluxing agent, not on the type of the fluxing agent. Furthermore, Lauzon fairly teaches that the potassium aluminum fluoride and the potassium fluorozincate are analogous fluxing agents in the art.

Second, Appellants argue that the applied references are silent as to which process conditions to select for optimization, much less how any process conditions might affect particle size.

Controlling the particle size of the product by adjusting the process conditions would have been obvious to one skilled in the art, however, even if the particle size of the product could not be controlled during the process of making it through routine experimentation, it would have been obvious to one skilled in the art to subject the product to additional process steps such as agglomerating, pulverizing, classifying, etc. to obtain a product with the desired particle size.

Finally, Appellants argue that Appellants have unexpected discovered that alkali metal fluorozincate salts having a desired particle size can be prepared by drying the product of an aqueous reaction without the need for additional processing (i.e., without pulverizing).

Appellants' alleged unexpected result as stated above is for the process of making the product (i.e., the process does not require a pulverizing step), however, Appellants' claims are to a product, not a process for making it. There is showing or evidence to show that the claimed product is patentably different from the product of the prior art, when the process of the prior art includes a pulverizing step.

A. Appellants argue that claim 8 and 9 are independently patentable because the cited references fail to teach or suggest an alkali metal fluorozincate in which the particles have a diameter of less than 5 micrometers.

Appellants argue that none of the cited references disclose or suggest potassium fluorozincate particles having a diameter of less than 5 micrometers.

As stated in the above rejection, Popoola '187 is applied to teach that the desired particle size for a fluxing agent is preferably controlled to less than 10 micrometers, with at least 70% of such salts being in the particle size range of 2-4 micrometers (note column 2, lines 22-24 and column 3, lines 45-47). These ranges at least overlap the claimed range of "less than 5 micrometers". It would have been obvious to one skilled in the art to combine the teaching of the particle size in Popoola '187 with the teaching of potassium fluorozincate fluxing agent in Seseke-Koyro or Lauzon for the reasons stated above.

B. Appellants argue that claim 10 is independently patentable because the cited references fail to teach or suggest an alkali metal fluoride metal fluorozincate wherein 50% of the particles have a diameter of less than 3.8 micrometers.

Appellants argue that none of the cited references disclose alkali metal fluorozincate particles having such fine particle size.

Again, Popoola '187 teaches that *at least* 70% of the fluxing salts are in the particle size range of 2-4 micrometers. This fairly suggests the claimed range of "50% of all particles have a diameter < 3.8 μm". In any event, it would have been obvious to one skilled in the art to optimize the particle size of the fluxing agent within the range of "less than 10 microns" as disclosed in the Popoola '187 in order to maintain the particles in suspension at all times without stirring (note column 2, l lines 18-27). It would have been obvious to one skilled in the art to combine the teaching of the particle size in Popoola '187 with the teaching of potassium fluorozincate fluxing agent in Seseke-Koyro or Lauzon for the reasons stated above.

C. Appellants argue that claim 11 is independently patentable because the cited references fail to teach or suggest an alkali metal fluorozincate in which 50% of the particles have a diameter of less than 11 micrometers.

Appellants argue that none of the cited references disclose or suggest alkali metal fluorozincate particles having a grain spectrum in which 50% of the particles have a diameter of less than 11 micrometers.

The disclosure of "less than 10 microns" in Popoola '187 would meet the claimed range of "less than 11 micrometers" in Appellants' claim 11. Again, it would have been obvious to one skilled in the art to combine the teaching of the particle size in Popoola '187 with the teaching of potassium fluorozincate fluxing agent in Seseke-Koyro or Lauzon for the reasons stated above.

D. Appellants argue that claim 12 is independently patentable because the cited references fail to teach or suggest an alkali metal fluorozincate wherein 50% of the particles have a diameter of greater than 11 micrometers.

Appellants argue that none of references tech or suggest an alkali metal fluorozincate having such a grain spectrum, as required in Appellants' claim 12.

Shimajiri '775 is applied as stated above to teach that when a dry process is used to apply a fluxing agent onto an aluminum substrate, the fluxing agent is desired to have a grain size of 15 microns on average (note column 4, lines 55-57). This fairly suggests the claimed range of "50% of all particles have a diameter > 11 μm". It would have been obvious to one skilled in the art to combine the teaching of the particle size in Popoola '187 with the teaching of potassium fluorozincate fluxing agent in Seseke-Koyro or Lauzon for the reasons stated above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

N. M. Nguyen

Conferees:

Stanley Silverman

Patrick Ryan